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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,315	01/23/2004	Jacques Alain Deverin	33997.0094	8164

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/764,315	DEVERIN ET AL.	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004 and 01 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/23/04 and 9/1/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the intersection of the third illumination beam path (3) and the first illumination beam path (10a), and the intersection of the third illumination beam path (3) and the second illumination beam path (10b), wherein both the intersections form either an angle of approximately 90 degrees or an angle between zero and 180 degrees (see Claims 16-18) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the coaxial alignment of the first and second illumination beam paths (see 10a and 10b, respectively) with the optical axis (8), (see Claim 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to

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the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 4, an optical axis (8), wherein the first and second illumination beam paths (10a, 10b) are aligned coaxially with the optical axis is not provided in the specification,

Claim 5, is dependent on Claim 4, and hence inherits the deficiencies of Claim 4,

Claim 16, an intersection forming an angle of approximately 90 degrees between the third illumination beam path (3) and the first illumination beam path (10a) is not provided in the specification,

Claim 17, an intersection forming an angle of approximately 90 degrees between the third illumination beam path (3) and the second illumination beam path (10b) is not provided in the specification,

Claim 18, an intersection forming an angle between zero and 180 degrees between the third illumination beam path (3) and the first illumination beam path (10a), and an intersection forming an angle between zero and 180 degrees between the third illumination beam path (3) and the second illumination beam path (10b) is not provided in the specification. In particular, the specification only alludes to angles being 90 degrees, and not any other angle in the range of zero to 180 degrees.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because in line 1, 'The invention concerns a' should be 'A'. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claims 13-15 are objected to because of the following informalities:

Claims 13-15 fail to provide proper antecedent basis for the claimed subject matter:

Claim 13, lines 19-20, 'each of the first and second deflection elements (12a, 12b)' should be 'each of a first deflection element (12a) and a second deflection element (12b)',

Claim 14 is dependent on Claim 13, and hence inherits the deficiencies of Claim 13,

Claim 15, lines 23-24, 'each of the first and second deflection elements (12a, 12b)' should be 'each of a first deflection element (12a) and a second deflection element (12b)'.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-9, 13, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koetke (U.S. Patent No. 5,760,952) in view of Conia et al. (WO 98/14816).

Koetke discloses an illuminating device for a surgical microscope (see col. 1, lines 6-7) comprising a first illumination device (see illumination device (7) that emits a first illumination beam to deflection element (13) in Figure 4) for providing a first illumination beam traveling along a first illumination beam path (see illumination beam path that lies between the first illumination device (7) and deflection element (2a) in Figure 4) and a second illumination device (see illumination device (7) that emits a second illumination beam to deflection element (15) in Figure 4, see also col. 6, lines 4-5) for providing a second illumination beam traveling along a first illumination beam path (see illumination beam path that lies between the second illumination device (7) and deflection element (2c) in Figure 4).

Koetke additionally teaches the microscope further comprising a third illumination device (see illumination device (7) that emits a third illumination beam to deflection element (2b) in Figure 4, see also col.6, lines 4-5) for providing a third illumination beam traveling along a third illumination beam path (see illumination beam path that lies between the third illumination device (7) and deflection element (2b)).

Koetke also discloses the microscope comprising a main objective (see 3 in Figure 1), a first deflection element (see 2a in Figure 4) arranged above the main objective in the first illumination beam path, and a second deflection element (see 2c in Figure 4) arranged above the main objective in the second illumination beam path.

Additionally, Koetke discloses the microscope comprising a deflection prism (see 2b in Figure 4, see also col. 6, lines 6-7) in the third illumination beam path, wherein the first and second deflection elements are arranged at the height of the deflection prism (see Figure 1, see also col. 3, lines 57-58).

Koetke also teaches that the first and second deflection elements are not parts of a composite deflection element (see Figure 4).

Moreover, Koetke discloses that the first and second deflection elements and the deflection prism are not parts of a deflection element as well.

Koetke also discloses that the first and second deflection elements can be mirrors (see col. 6, lines 8-9).

Koetke additionally teaches that the first and second elements can be prisms (see col. 6, lines 6-7).

Koetke discloses a device as set forth above. Koetke lacks the first illumination beam and the second illumination beam having the same light frequency. However, Conia et al. teaches a microscope comprising one or more external laser light sources. In particular, Conia et al. teaches two embodiments, one where multiple laser sources (see 30, 31 and 33 in Figure 1) emit multiple laser beams (see 32, 37 and 39, respectively, in Figure 1), and a second embodiment where the multiple laser beams originate from a common laser (page 7, lines 25-27), and therefore, all the laser beams inherently have the same light frequency. Thus, one of ordinary skill would have known to utilize multiple laser sources, all of which emit light beams that have the same light frequency. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

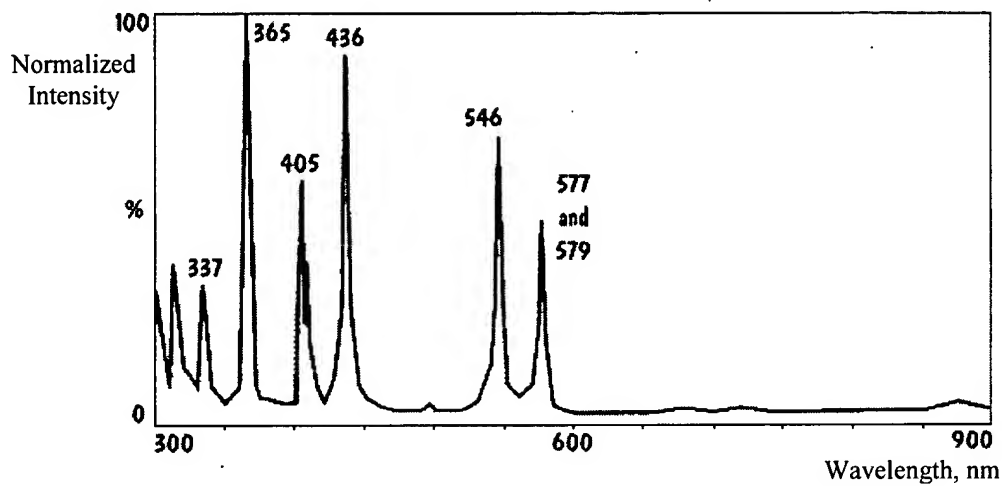
made to have the illuminating device of Koetke have the first and second illumination beams be of the same light frequency as taught by Conia et al. to increase the brightness or intensity of the laser beams incident on the sample.

Claims 3-5, 10, 12, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koetke in view of Conia et al. as applied to Claim 1 above, and further in view of Nonoda et al. (U.S. Patent No. 6,075,643).

With regard to Claims 3-5, Koetke in view of Conia et al. discloses a device as set forth above in Claim 1. Koetke in view of Conia et al. additionally discloses the microscope comprising an optical axis (see 5 in Figure 7 of Koetke), wherein the first and second illumination beam paths are aligned coaxially with the optical axis of the microscope (see Figure 4 and 7 of Koetke). Furthermore, Koetke in view of Conia et al. teaches the first and second illumination devices being arranged symmetrically with respect to the optical axis (see optical axis (5) in Figure 1 of Koetke, see also Figure 4 of Koetke, note that the optical axis runs vertically through the center of the microscope objective (3) and that the third illumination beam path runs horizontally through the optical axis and that the first and second illumination devices are aligned symmetrically with respect to the third illumination device). Koetke in view of Conia et al. lacks the light frequency of the first and second illumination beams being in the ultra-violet range. However, Nonoda et al. teaches a reflection fluorescence microscope (see Figure 13) wherein multiple sources (see 3, 6, 9 and 12 in Figure 13) are used to illuminate the sample (see 1 in Figure 13). In particular, Nonoda et al. teaches that mercury light sources may be used. It is noted that the spectra

for light emitted by mercury lamps, as shown below in Figure 1 of this Detailed Action, inherently includes wavelengths in the ultra-violet range.

Figure 1



Spectrum of a Mercury Lamp

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. have the first and second illumination beams be in the ultra-violet range as taught by Nonoda et al. provide for more varied illumination and excitation conditions of the sample in the microscope system.

With regard to Claims 10 and 12, Koetke in view of Conia et al. discloses a device as set forth above in Claims 1,2,6 and 7. Koetke in view of Conia et al. lacks the first and second deflection elements and the deflection prism being part of a composite deflection element and being replaceable to permit interchange with like elements of chosen focal

power. However, Nonoda et al. teaches a reflection fluorescence microscope (see Figure 13) comprising a cube turret (see CT in Figure 13, note that CT is not labeled in Figure 13, but is labeled in Figure 3) which acts as a composite or holding element to enclose cubes, or deflecting elements, (see CV1, CV1' or DM1, DM1', respectively, in Figure 13). Nonoda et al. additionally teaches that at least four cubes having the same structure and shape as cubes CV1 and CV1', which can contain a deflection element, can be inserted or detached within the cube turret (see col. 4, lines 59-65). It is noted that the deflection elements function only to reflect or deflect light and have no focal power. Further it is noted that focal power may equal zero, as this is not precluded in the claimed limitation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. have the first and second deflection elements and the deflection prism be part of a composite deflection element, and be replaceable to permit interchange with like elements of chosen focal power as taught by Nonoda et al. to simplify alignment of the deflection elements in the beam path, and to provide for adjustable light beam characteristics by inserting or removing deflection elements having particular light beam modifying characteristics.

With regard to Claim 16-18, Koetke in view of Conia et al. discloses a device as set forth above in Claims 1 and 2. Koetke in view of Conia et al. lacks the third illumination beam path and the first illumination beam path intersecting to form an angle of approximately 90 degrees. Koetke in view of Conia et al. also lacks the third illumination beam path and the second illumination beam path intersecting to form an angle of approximately 90 degrees. Furthermore, Koetke in view of Conia et al. lacks the third

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illumination beam path and the first illumination beam path intersecting to form an angle between zero and 180 degrees, and the third illumination beam path and the first illumination beam path intersecting to form an angle between zero and 180 degrees.

However, Nonoda et al. teaches a reflection fluorescence microscope (see Figure 13) comprising a first illumination beam path (see 34 in Figure 13), a second illumination beam path (see 33 in Figure 13) and a third illumination beam path (see 32 in Figure 13).

Nonoda et al. additionally teaches that the third illumination beam path and the first illumination beam path intersect to form an angle of approximately 90 degrees (it is known that in order for two separate light beams, traveling on two separate light beam paths, to intersect and continue to collinearly travel on the same optical path, after being reflected off of a common deflection element, the angle at which their two respective light beam paths intersect must be at approximately 90 degrees), which is also an angle between zero and 180 degrees. Furthermore, Nonoda et al. teaches that the third illumination beam path and the second illumination beam path intersect to form an angle of approximately 90 degrees (see explanation as set forth above), which is also an angle between zero and 180 degrees. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. have the third illumination beam path and the first illumination beam, along with the third illumination beam path and the second illumination beam path, intersect to form an angle of approximately 90 degrees, which is also an angle between zero and 180 degrees, as taught by Nonoda et al. to simplify the alignment of light beams.

With regard to Claim 21, Koetke in view of Conia et al. discloses a device as set forth above in Claim 1. Koetke in view of Conia et al. lacks the first and second illumination beams traveling upward to an observed specimen for transmitted illumination of the specimen. However, Nonoda et al. teaches an erected-type reflection fluorescence microscope (see Figure 13) comprising of a first and a second illumination beam (see illumination beams traveling along illumination beam paths 34 and 33, respectively, in Figure 13). Nonoda et al. additionally teaches that this embodiment of an erected-type microscope may be constructed to operate as an inverted-type microscope (see Figure 3). Furthermore, Nonoda et al. teaches the first and second illumination beams of the inverted-type microscope travel upward to an observed specimen (see 1 in Figure 3) for transmitted illumination of the specimen. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. have the first and second illumination beams travel upward to an observed specimen for transmitted illumination of the specimen as taught by Nonoda et al. to simplify placement of a sample on the stage since, in the inverted-type embodiment, the objective does not obstruct the sample stage.

Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koetke in view of Conia et al. as applied to Claim 1 above, and further in view of Littmann (U.S. Patent No. 3,186,300).

With regard to Claim 11, Koetke in view of Conia et al. discloses a device as set forth above in Claims 1, 2, 6 and 7. Koetke in view of Conia et al. lacks that at least one of

the first and second deflection elements and the deflection prism have a non-zero focal power. However, Littmann teaches a microscope (see Figure 4) comprising of two prisms (see 28 and 28' in Figure 4), whose exit surfaces are spherical, that reflect incident light from the illumination source (see col. 3, lines 19-23). It is noted that since exit surfaces are spherical (curved), these surfaces will inherently exhibit non-zero focal power.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. have at least one of the first and second deflection elements and the deflection prism have a non-zero focal power as taught by Littmann to provide a sharply delimited illumination field.

With regard to Claim 19, Koetke in view of Conia et al. discloses a device as set forth above in Claim 1. Koetke in view of Conia et al. lacks that the device is a stereo-microscope. However, Littmann teaches a microscope (see Figure 4) that is a stereo-microscope used in operative surgery (see col.1, lines 12-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. be a stereo-microscope as taught by Littmann to provide stereoscopic viewing of images from the microscope system.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koetke in view of Conia et al. as applied to Claim 1 above, and further in view of Gibbons et al. (U.S. Patent No. 4,311,358).

With regard to Claim 14, Koetke in view of Conia et al. discloses a device as set forth above in Claim 1 and 13. Koetke in view of Conia et al. lacks having each of the

deflection elements being a concave mirror. However, Gibbons et al. teaches an illuminating device for fluorescence microscopes comprising a concave mirror (see 19 in the Figure) that deflects an incident light from the illumination source (see col. 2, lines 46-49). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Koetke in view of Conia et al. have each of the deflection elements be a concave mirror as taught by Gibbons et al. to provide additional shaping (e.g. additional collimation, focusing or de-focusing), in addition to the conventional deflecting function, of the incident beam in the microscope system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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7/25/05